

Appl. No. 10/723,146
Response dated April 15, 2008
Reply to Office Action of November 15, 2007

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Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A method of treating a substrate to improve the alcohol repellency of the substrate, the method comprising contacting a first side of a substrate with a treatment solution comprising an ionic fluoropolymer and a monovalent salt wherein the treatment solution contains less than about 0.05 weight percent by weight of an antistatic agent, followed by applying an antistatic agent to the substrate prior to full curing of the fluoropolymer so that the antistat does not interfere with the water repellency of the first side, wherein the antistatic agent is an organic phosphate ester.
2. (original) The method of Claim 1, wherein the substrate is selected from the group consisting of nonwoven webs, foams, films, and porous films and the treatment solution comprises less than about 0.005 weight percent by weight of an antistatic agent.
3. (previously presented) The method of Claim 1, wherein the treatment solution includes no antistatic agent.
4. (canceled)
5. (canceled)
6. (original) The method of Claim 1, wherein the treated substrate has a hydrostatic head value of greater than about 20 mBar as measured by Federal Test Standard 191A, Method 5514 and the method of treating the substrate decreases the hydrostatic head value of the substrate by about 10 percent or less relative to the untreated substrate.

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7. (original) The method of Claim 1, wherein the treated substrate has a hydrostatic head value of greater than about 45 mBar as measured by Federal Test Standard 191A, Method 5514 and an isopropyl alcohol repellency of at least about 70 percent as measured by INDA Standard Test No. IST 80.9-74 (R-82) wherein the method of treating the substrate decreases the hydrostatic head value of the substrate by about 10 percent or less relative substrate.
8. (original) The method of Claim 1, wherein the substrate is a nonwoven fabric.
9. (original) The method of Claim 1, wherein the substrate is a nonwoven fabric laminate.
10. (original) The method of Claim 1, wherein the substrate is an infection control fabric that is or comprises a spunbond/meltblown/spunbond laminate, a spunbond/film/spunbond laminate, a spunbond/film/spunbond/meltblown/spunbond laminate or a spunbond/film/film/spunbond laminate.
11. (original) The method of Claim 1, wherein the treatment solution comprises less than about 0.5 weight percent of a monovalent salt or a mixture of monovalent salts.
12. (original) The method of Claim 1, wherein the treatment solution comprises less than about 0.25 weight percent of a monovalent salt or a mixture of monovalent salts and at least about 0.5 weight percent of an ionic fluoropolymer or a mixture of ionic fluoropolymers.
13. (original) The method of Claim 1, wherein the treatment solution comprises less than about 0.2 weight percent of a monovalent salt or a mixture of monovalent salts and at least about 0.5 weight percent of an ionic fluoropolymer or a mixture of ionic fluoropolymers.

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14. (original) The method of Claim 1, wherein the treatment solution comprises less than about 0.1 weight percent of a monovalent salt or a mixture of monovalent salts.
15. (original) The method of Claim 1, wherein the treatment solution comprises less than about 0.05 weight percent of a monovalent salt or a mixture of monovalent salts.
16. (original) The method of Claim 1, wherein the treatment solution comprises less than about 2 weight percent of an ionic fluoropolymer or a mixture of ionic fluoropolymers.
17. (original) The method of Claim 1, wherein the treatment solution comprises less than about 1 weight percent of an ionic fluoropolymer or a mixture of ionic fluoropolymers.
18. (original) The method of Claim 1, wherein the treatment solution comprises from about 0.1 weight percent to about 1 weight percent of an ionic fluoropolymer or a mixture of ionic fluoropolymers.
19. (original) The method of Claim 1, further comprising drying the treated substrate wherein the dried substrate comprises less than about 0.5 weight percent of fluorine.
20. (original) The method of Claim 1, further comprising drying the treated substrate wherein the dried substrate comprises less than about 0.25 weight percent of fluorine.
21. (original) The method of Claim 1, further comprising drying the treated substrate wherein the dried substrate comprises less than about 0.15 weight percent of fluorine.
22. (original) The method of Claim 1, wherein the treatment solution is an aqueous treatment solution.

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23. (original) The method of Claim 14, wherein the aqueous treatment solution further comprises an alcohol.
24. (original) The method of Claim 15, wherein the aqueous treatment solution comprises an alkyl alcohol.
25. (original) The method of Claim 1, wherein the monovalent salt is sodium nitrate.
26. (previously presented) The method of Claim 1, wherein the ionic fluoropolymer is selected from the group consisting of fluoroalkyl acrylate homopolymers, fluoroalkyl acrylate copolymers, fluorinated siloxanes, fluorinated silicones, fluorinated urethanes, and mixtures thereof.
27. (previously presented) The method of Claim 1, wherein the ionic fluoropolymer is a fluoroalkyl acrylate copolymer.
28. (withdrawn) A substrate treated according to the method of Claim 1.
29. (withdrawn) An infection control fabric treated according to the method of Claim 1.
30. (withdrawn) A nonwoven fabric laminate comprising a first exterior surface and a second, opposing exterior surface wherein the first exterior surface comprises an ionic fluoropolymer and a monovalent salt and the second exterior surface that comprises an antistatic agent.
31. (withdrawn) The nonwoven fabric laminate of Claim 30, wherein the laminate comprises at least one meltblown nonwoven layer and the nonwoven fabric laminate has a hydrostatic head value of greater than about 60 mBar as measured by Federal Test

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Standard 191A, Method 5514 and the hydrostatic head value is within 10 percent of the laminate that has not been treated.

32. (withdrawn) The nonwoven fabric laminate of Claim 30, wherein the laminate comprises at least one meltblown nonwoven layer and the nonwoven fabric laminate has a hydrostatic head value of greater than about 45 mBar as measured by Federal Test Standard 191A, Method 5514 and is within 5 percent of the laminate that has not been treated.

33. (previously presented) A method of improving the alcohol repellency of a nonwoven laminate by applying a topical treatment to a nonwoven substrate while minimizing any negative effect of the topical treatment on the water repellency of the nonwoven substrate, the method comprising:

providing a nonwoven laminate comprising at least one spunbond layer and at least one meltblown layer;

contacting a first side of the nonwoven substrate with an aqueous topical treatment solution that does not include an organic phosphate ester, wherein the treatment solution comprises water, less than about 0.1 weight percent of a monovalent salt or a mixture of monovalent salts and from about 0.1 to about 1 weight percent of an ionic fluoropolymer or a mixture of ionic fluoropolymers;

wherein the monovalent salts are selected from the group consisting of sodium chloride, sodium nitrate, sodium carbonate, lithium chloride, lithium nitrate, lithium carbonate, potassium chloride, potassium nitrate, and potassium carbonate;

the ionic fluoropolymers are selected from the group consisting of cationic and anionic fluoroalkyl acrylate homopolymers, fluoroalkyl acrylate copolymers, fluorinated siloxanes, fluorinated silicones, fluorinated urethanes, and mixtures thereof; and

then contacting a surface of the topically treated nonwoven substrate prior to full curing of the fluoropolymer with an antistatic agent selected from the group consisting of organic phosphate esters so that the antistat does not interfere with the water repellency of the first side.

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34. (original) The method of Claim 33, wherein the treated substrate has an isopropyl alcohol repellency of at least about 70 percent as measured by INDA Standard Test No. IST 80.9-74 (R-82) wherein the method of treating the substrate decreases the hydrostatic head value of the substrate by about 20 percent or less relative to the untreated substrate.
35. (withdrawn) A nonwoven surgical fabric treated according to the method of Claim 33.